PROPOSED STATE NATURAL AREAS

After the designation of Land and Recreation Management Areas, and identifying their specific resource management prescriptions, the state forest examined opportunities to further protect areas with exceptional natural features. The Department evaluated sites that could contribute to critical habitat for rare species, provide ecological reference areas, or which contain significant geological or archaeological features. These sites are proposed for designation as State Natural Areas (SNAs). In many cases, the Black River State Forest offers the best representations of these unique attributes in the state or within the central sand plains ecological landscape.

The goals set by the Division of Forestry are developed and presented to the public before the Bureau of Endangered Resources submits candidate sites for SNA designation. As a result, SNAs are considered overlays to Land Management Areas. In this way, the same piece of land can achieve the goals of two different Department programs. Activities for each proposed SNA are the same as the land management prescriptions as well as the recreation uses designed to meet forestry goals. For example, a SNA located within an area managed for white pine will follow the objectives for that land management area, rather than a separate SNA management plan. The exact same timber management and recreation uses would occur with or without SNA designation. See Appendix A for details on the designation process for State Natural Areas.

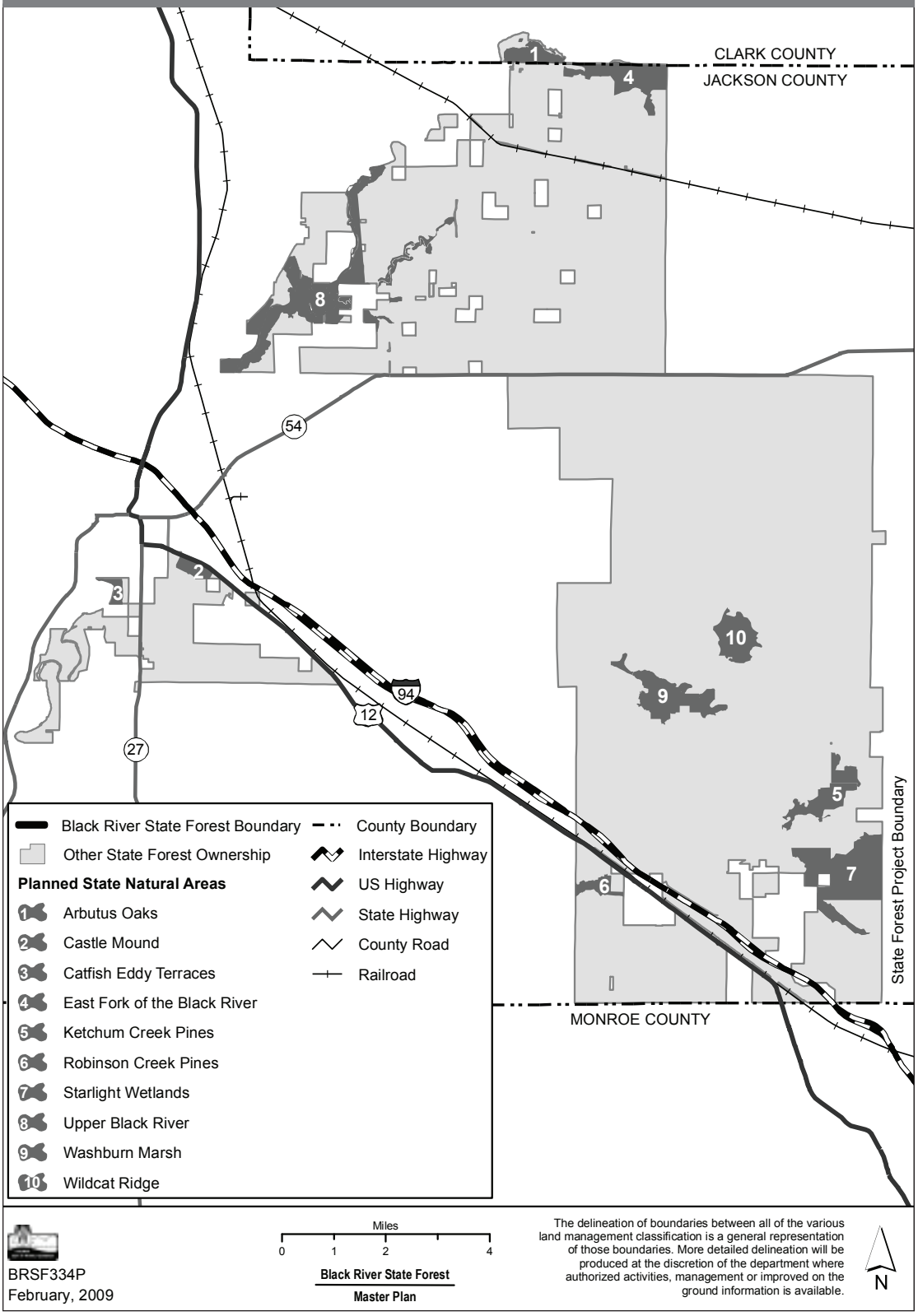
TABLE 2.25 PROPOSED STATE NATURAL AREAS

Management Area Number and Name		State Natural Areas*			
			Existing Acres	Proposed New Acres	Total Proposed Acres
Native Community Management Areas		**SNA Name**	**614**	**3,899**	**4,513**
6	Upper Black River	Upper Black River	–	1,454	**1,454**
7	Arbutus Oaks	Arbutus Oaks	–	215	**215**
8	Castle Mound Pine Forest	Castle Mound	91	27	**118**
9	East Fork of the Black River	East Fork of the Black River	–	471	**471**
10	Ketchum Creek Headwaters	Ketchum Creek Pines	140	284	**424**
12	Peatlands	Washburn Marsh	298	267	**565**
		Starlight Wetlands**	–	233	**233**
13	Catfish Eddy Terraces	Catfish Eddy Terraces	–	75	**75**
14	Robinson/Millston Pines	Robinson Creek Pines	85	41	**126**
17	Starlight Wetlands	Starlight Wetlands**	–	832	**832**
Recreation Management Area			**--**	**379**	**379**
18	Overmeyer Hills	Wildcat Ridge	–	379	**379**
Totals			**614**	**4,278**	**4,892**

**State Natural Areas are part of Land Management Areas. Management objectives of these areas are consistent with overall Land Management Area objectives.*
***Starlight Wetlands SNA is one SNA which extends into two different management areas. The total size of the SNA is 1,065 with 233 acres within the Peatlands Native Community Management Area and 832 acres within the Starlight Wetlands Native Community Management Area. The Peatlands therefore have two different SNAs within its boundary.*

PROPOSED STATE NATURAL AREAS

MAP 2.26 PROPOSED STATE NATURAL AREAS



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GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE

For each forest type there is a specific set of management techniques which favor the maintenance and regeneration of that given type. The following describes the general forest management prescriptions to be used for each primary forest type on the Black River State Forest. Each prescription will be applied wherever management for that specific forest type is an objective, as stated in the individual management areas earlier in this chapter. The individual area management plans may modify or limit these general prescriptions to fit the area.

JACK PINE DOMINATED FOREST

This is an early successional forest type that requires disturbance and full sunlight conditions to regenerate. Historically, jack pine stands regenerated following fire or insect infestation events. Harvest and ground disturbance not only provide for good regeneration of jack pine but also support the development of a diverse mix of grasses, forbs, and shrubs which are important during successional stages of this forest type.

General Management Prescriptions

- On dry sites, clearcut jack pine at biological maturity (45-75 years).
- In mixed stands with white pine, oak, red maple or aspen, clearcut the entire stand at biological maturity (45-75 years) and regenerate to a mixed species composition; supplemental planting of jack pine may be needed to ensure adequate stand stocking.
- Seed tree and shelterwood systems may have application on limited sites and, if implemented, should be closely monitored for results. Post-sale and pre-sale scarification may be required.
- Re-establish jack pine stands through natural regeneration, mechanical scarification, planting (the most effective method if natural regeneration is absent), and post-harvest scarification followed by direct seeding or fire. Herbicide treatments, before or after establishment, may be necessary to maintain this type.

WHITE PINE DOMINATED FOREST

The Black River State Forest has an opportunity to restore a pre-settlement "pinery"condition similar to what existed prior to the logging era. This may be implemented through protection of natural communities, limiting some harvesting practices, managing for old growth characteristics, or intensively managing for timber products on high quality sites.

Natural regeneration is fostered by retaining white pine standards or reserve trees across the property. Natural conversion occurs when white pine has been a significant component in the understory and the overstory trees are removed during a commercial harvest at maturity.

General Management Prescriptions

Depending on origin, composition, and site, several management activities will be used to manage the white pine forest toward the desired objectives:

- Management will be implemented in existing or future designated State Natural Areas to retain large white pine sawtimber.
- Begin thinning pole-size stands, whether plantations or natural stands, at age 35-40 years when the stocking is at or near the "A"level. Overstocked stands should be thinned from below to not less than the "B"level on the stocking guides. Conduct thinnings at 8-20 year intervals, never removing more than 50% of the stand's stocking.
- Mixed white pine stands of oak, red maple, aspen, or jack pine will be managed to maintain natural diversity as long as possible. Thinning should favor crop trees of various species, including those with wildlife value. Mixed stands with short-lived species will most likely be converted to a more pure white pine stand by the first or second thinning cycle.
- White pine plantations will be managed intensely for high quality forest products on an economic, rather than biological, rotation. Thinning to improve growth on crop trees will maintain a more even spacing to maximize production. Pruning, in stages up to 17 feet will ensure quality lumber in the first full log. Thinning and pruning are also encouraged in high quality, well-stocked natural stands.
- Depending on site classification and site conditions, manage white pine to its economic or biological maturity. Regenerate the stand using a shelterwood harvest followed with a final cut 5-20 years later to release advanced regeneration.

RED PINE DOMINATED FOREST

Only a few patches of natural red (Norway) pine forest exist on the Black River State Forest. Most red pine is found in plantations established between 1930-1970; many have been selectively thinned three or four times for forest products.

General Management Prescriptions
Several management activities will be used to manage red pine stands toward desired conditions of large, older trees with diverse understories.

- Once red pine plantations have reached 25 years of age and are fully stocked, periodically thin on a recurring basis at 8-20 year intervals following guidelines in the DNR Silviculture and Forest Aesthetics Handbook.
- At economic maturity (80-140 years), harvest the stand according to prescriptions outlined in the DNR Silviculture and Forest Aesthetics Handbook such as clearcutting, seed tree method, or a shelterwood cut with overstory removal once regeneration is established
- If a stand is identified in the property recon to be managed for biological maturity due to site conditions, the stand should be harvested at 140-250 years according to prescriptions outlined in the DNR Silviculture and Forest Aesthetics Handbook. Acceptable management prescriptions on these sites include clearcutting, seed tree, or a shelterwood cut with overstory removal once regeneration is established.
- Convert stands to natural regeneration if a more desirable species, either conifer or hardwood, is suited to the site.
- Plant red pine on suitable open fields or cropland obtained in future land acquisitions. Hand or machine plant DNR nursery stock following site preparation by mechanical and/or herbicide treatment, if needed, to maintain growth, vigor, and survival. Mix other species within the planting area if the site is suitable to create a diverse stand.

OAK DOMINATED MIXED FOREST

Disturbance is required to regenerate and maintain oak forests. If fire is excluded from an area, subsequent stands tend to be mixed with other species. Scrub oak, consisting of northern pin oak, black oak, and some burr oak, occurs on dry to very dry sandy sites, including ridge tops and south slopes in hilly terrain. Red oak with a mix of white and black oak is dominant on dry-mesic sites. Clearcut and shelterwood systems are used to regenerate these stands, but some non-commercial treatments of oak saplings and seedlings need to be employed in order to maintain any population of oak in the next forest. This forest type has high value for aesthetics, wildlife, and forest products.

General Management Prescriptions

- Regenerate scrub oak naturally through clearcut harvests on rotation intervals of 45-60 years, and in conjunction with jack pine regeneration harvests. Rely on coppice reproduction.
- Use intermediate thinning practices in younger red oak stands (35-80 years) to maintain vigor and health, and to improve growth.
- Manage red oak dominated mixed stands on dry-mesic to moist sites with sawlog production potential on rotations of 80-120 years. On good quality sites, consider managing on an extended rotation of up to 150 years. Regenerate by clearcut or shelterwood methods. Use pre-harvest and post-harvest treatments such as scarification, herbicides, and residual tree removal where appropriate to obtain natural regeneration.
- Manage mixed stands of oak, pine and maple on an even-aged basis favoring long-lived species to maintain natural diversity.
- On hilly terrain where appropriate soil, slope, and moisture conditions exist, manage to promote a red oak component.
- Follow management options outlined in the state forest's Gypsy Moth Management Plan to encourage retention of an oak component during outbreak periods.
- To provide wildlife habitat, aesthetic values, and diversity, seek a variety of age classes and stand sizes. Leave reserve trees as individuals or groups.

ASPEN DOMINATED MIXED FOREST

Aspen is an early successional species that requires disturbance and abundant sunlight to regenerate.

General Management Prescriptions
Depending whether the stand is in a pure or mixed community, different management activities will be used to move the forest toward the future desired state.

- In pure stands, harvest and regenerate aspen naturally through clearcutting at staggered intervals of 30-60 years to produce wider age class diversity. Rely on coppice reproduction.
- In mixed stands where wider diversity is also the future objective, use "coppice with standards"as the primary management strategy. This method removes aspen trees but retains individual oak or pine within the stand, thereby enhancing diversity.
- Provide a variety of age classes and stand sizes across the landscape for wildlife habitat benefits, ecological diversity, and aesthetic value.

FORESTED WETLANDS

Two types of wetland forest exist on the Black River State Forest. Swamp conifers, which contain tamarack, black spruce, jack pine, and white pine in pure stands of individual species or combinations of two or more species growing on sphagnum moss; and swamp hardwoods consisting primarily of black ash and red maple.

General Management Prescriptions

- No management activities will be conducted within wetlands with small sized, slow growing, non-merchantable trees, lowland brush, or open bogs and marshes. However, access across these areas may be necessary periodically for temporary roads. These roads will be limited to frozen ground conditions.
- Productive stands on wetlands capable of producing merchantable timber within their accepted rotation age may be regenerated by limited harvest following guidelines outlined in the DNR Silviculture and Forest Aesthetics Handbook. Timber harvests will only be conducted under frozen ground or very dry conditions, using techniques and equipment that prevent rutting and other negative impacts to the hydrology of the wetland.

BOTTOMLAND HARDWOOD FOREST

The primary species associated with the bottomland hardwood forest include silver maple, river birch, green ash, American elm, hackberry, and an array of upland associated species.

General Management Prescriptions

- Since this forest type lies within important recreation corridors and riparian zones, it will be managed primarily for aesthetic and ecological values.
- Manage and maintain this type at a landscape scale and promote its natural diversity.
- Harvest and regenerate a mixture of species in accordance with the DNR Silviculture and Forest Aesthetics Handbook.
- Implement a shelterwood or group selection harvest method for green ash, elm, and hackberry. Silver maple and river birch will require periodic flooding to adequately regenerate.
- Conduct timber harvests only under frozen ground or very dry conditions to prevent rutting and potential soil damage.

MARSHES AND OPEN WETLANDS

The open landscape on the Black River State Forest that is associated with wetlands includes bog, sedge meadow, poor fen, emergent marshes, and small stream drainages. Sphagnum moss and sedges are the common dominant plants. Most of the open landscape, including some upland grass areas connecting marshes and flowages, are managed for wildlife with waterfowl and Sharp-tailed Grouse as focal objectives. Sphagnum moss has been commercially harvested from post-settlement time to the present and represents less than 3% of the marsh acreage.

General Management Prescriptions

There are approximately 6,000 acres of marsh and muskeg on the forest. Commercial mossing may occur on the forest; however mossing is prohibited within the Peatlands Native Community Management Area to protect peatland habitat and maintain site hydrology. Moss harvesting will follow the guidelines outlined in the most recent version of Department Manual Code 2821.4 "Sphagnum Moss Harvest on State Managed Lands". Access for logging activities across and through marshes will be limited to winter only, frozen ground conditions.